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ABSTRACT

In recent years, assessment of what is actually learned or accomplished in a college career has gained increasing attention. An instructor of a weather and climate geography course at Illinois State University constructed a 25-question multiple choice test in order to develop a method of assessing what his students learned during the course. The tests were administered to each section of the course on the first day of classes and again on the last day of classes. Because not all students who ultimately enrolled were present on the first day and not everyone bothered to attend on the last day, out of a possible 396 students, only 143 took both the pre-test and the post-test. For the pre-test, the mean was 23.6, illustrating little knowledge of weather and climate. For the post-test the mean was 43.5. Before-and-after testing may prove the worth of a course or program, but there are problems. Due to enrollment procedures used at many universities, it will always be difficult to test everyone. The second problem is student motivation in taking such tests. At the present time, the test scores are not considered in a student's grade; thus there is no real motivation to do well on them. (SM)

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VALUE ADDED:

A CASE STUDY OF A GEOGRAPHY COURSE

by

Eric S. Johnson

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VALUE ADDED: A CASE STUDY OF A GEOGRAPHY COURSE

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In recent years assessment of what is actually learned or accomplished in a college career has gained increasing attention. In at least one state, Tennessee, at least part of an institution's budget is based on the performance of that institution, which in practice meant assessing what the student had accomplished during his or her stay on campus. Talk of such value added testing began on my campus in the fall of 1986 with the formation of committees to try and develop a way to assess the value of various components of our general studies requirements. The idea intrigued me, and when I found I would be teaching all of the Weather and Climate sections in the Spring semester, 1987, I decided to do my own value added assessment.

First, I constructed a 25 question multiple choice test by using selected questions from each of the 50 question tests I had been using in the Weather and Climate class for several years. I selected six questions from each of the first three tests and seven from the fourth. The tests, using a machine scored answer form, were then administered to each section on the first day of class and again on the last day of class. For the 143 students who took both tests, the following results were obtained. For the pre-test given the first day of class the mean was 23.6, these students, largely second semester freshman knew nothing about Weather and Climate. Test item analysis showed only two

questions with a difficulty index greater than 50, that is only two questions were correctly answered by more than half the students. For the post test the mean was 43.5, not the level of improvement I was hoping for but an improvement in any case. Test item analysis revealed that eight questions now had a difficulty index greater than 50 and no questions had a difficulty index of less than 20, 13 questions had difficulty indexes less than 20 on the pretest.

What information can one gather from these results? At this point I am not sure, the mean of 43.5 on the post test is considerably less than the 56.3 mean for the course as a whole (that is the average score for the four tests). Of the 143 students who took both tests only 13 scored the same or lower on the second test, while seventy students at least doubled their scores.

The same test was given to my Weather and Climate class on the first day this fall results: 211 tests, a mean slightly greater than 21 and no question with a difficulty index greater than 50. This bunch knows even less than last spring's group. What will be the result in December, I hope better than a mean of 43 but only time will tell.

Will such before and after testing actually prove the worth of a course or program? Maybe, but there are problems. First, due to the enrollment procedures used at my University, and maybe others, it will always be difficult to test everyone. As I just indicated I gave tests to 211 students on the first day of class,

when the final class list was printed after the tenth day I had 234. Thus there will be at least 23 students who will have not had the pre-test, and currently an unknown number who took the pre-test but then dropped before the tenth day. To wait till the tenth day to give such a test would mean giving it after two weeks of class--how would that affect the results. Then due to the fact that I do not keep attendance in large lecture sections, attendance on the last day of class was rather poor, though not bad considering it was a very pleasant May 1. The combination of these two limited the total number of usable tests to 143 out of a possible 396. The 143 included only 9 of the 13 A students, excluded was one student who scored 100 on the post-test, no pre-test score. In general the A students showed strong improvement, the best being a 12 on the pre-test and an 80 on the post.

Then there is the student's motivation in taking such tests, at the present time they are not considered in the student's grade, thus there is no real motivation for them to do well, especially on the post-test on a pleasant May afternoon--fill in the files and get out. It may be that one will have to find some way of tying the successful post test to grades so that the student is motivated to do his or her best. In any case, I don't think one round of testing is conclusive and I intend to continue this for several semesters, and hopefully get better than a doubling of scores between pre- and post- tests, and maybe more 12 to 80's.